CEPTOR

Animal Health News
Volume 14, No. 3, September 2006

ISSN1488-8572

CEPTOR is published by: Animal Health and Welfare, Livestock Technology Branch, OMAFRA
Editor: Kathy Zurbrigg **Website:** www.omafra.gov.on.ca/english/livestock

Archived Issues of CEPTOR: www.oabp.ca

Animal Health and Welfare, OMAFRA
1 Stone Road West, Guelph, Ontario N1G 4Y2

Leslie Woodcock	(519) 826-6364

Wellington Place, R. R. # 1, Fergus, Ontario N1M 2W3

Neil Anderson	(519) 846-3410
Tim Blackwell	(519) 846-3413
Ann Godkin	(519) 846-3409
Jocelyn Jansen	(519) 846-3414
Bob Wright	(519) 846-3412
Kathy Zurbrigg	(519) 846-3418

OVC, University of Guelph, Guelph, Ontario N1G 2W1

Babak Sanei	(519) 824-4120 ext. 54650

Office of the Chief Veterinarian, OMAFRA
1 Stone Road West, Guelph, Ontario N1G 4Y2

Chief Veterinarian	Deb Stark	(519) 826-3528
Assistant Chief Veterinarian	David Alves	(519) 826-3127
Provincial Biosecurity	Paul Innes	(519) 826-4043
Epidemiology	Bruce McNab	(519) 826-4178

Rabies Update .. 2

CFIA's Notice to Equine Practitioners and Horse Owners 3

Animal Health Strategy Consultation 4

Livestock Emergency Response Training 4

Ontario Component of 2006 National Wild Bird Influenza Survey Including Wild Birds Found Dead 5

University of Guelph Swine Research Receives Top Ranking 6

Anything New In Water Testing? 7

The Value of Second Guessing Yourself 7

Swine Vets Tired and Cranky? Remember to Wear your Ear Plugs 8

Establishment of the Ontario Hoof Trimmers Guild 8

Bacterial Cultures from Acidified Milk and Milk Replacer 9

Master Hoofcare Technician Program 10

Castration of Beef Calves 11

Continuing Education/Coming Events 13

What does prudent drug use really mean?
How can I incorporate biosecurity measures into my practice? 15

CEPTOR feedback form 16

Ontario

Agriculture, Food and Rural Affairs
Livestock Technology Branch,
Animal Health and Welfare Group

Serving Ontario through
veterinary science, technology transfer,
outbreak investigation and
animal health surveillance

Tel: (519) 846-0941
Fax: (519) 846-8101

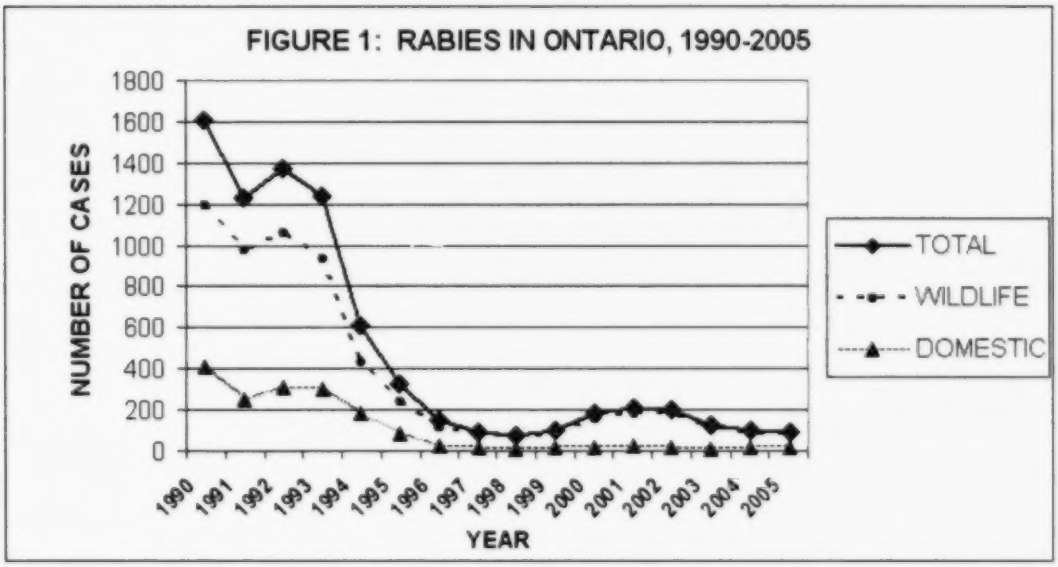
Rabies Update

Jocelyn Jansen, Animal Health and Welfare, OMAFRA

The number of rabies cases in Ontario dropped to below 100 in 2005. This was only the third time that this has happened since 1957. There has been a 97% drop in the number of fox-strain rabies cases since control measures were started in 1989.

According to Dennis Donovan of the Rabies Research and Development Unit (Ontario Ministry of Natural Resources), there have been approximately 37 cases of rabies during the first eight months of 2006. Based on these numbers, the number of cases for 2006 may again fall below 100. Most of the rabies cases this year have been diagnosed in bats and skunks. There have been a record number of bat submissions, which may account for the increased diagnoses. The Canadian Food Inspection Agency has noted a slight increase in rabies cases in Wellington County, particularly this past summer. The cases to date are as follows: 3 skunks, 1 bovine, 1 ovine, 1 dog and 1 cat.

The wildlife baiting program undertaken by the Ontario Ministry of Natural Resources, together with the vaccination of companion animals, has dramatically decreased the level of rabies in the province (**Figure 1**) – but the **risk is not zero**. The raccoon vaccine baiting control operation began in August and fox vaccine baiting will begin in October.



Ontario Ministry of Natural Resources, Rabies Research and Development Unit - http://rabies.mnr.gov.on.ca/

Ontario Ministry of Natural Resources, Rabies Reporter Home Page - http://www.gis.queensu.ca/RReporter/

Articles within CEPTOR may be used or reproduced, in whole or in part, with permission of the editor.
Contact: Kathy Zurbrigg, Animal Health and Welfare
Ontario Ministry of Agriculture, Food and Rural Affairs
Wellington Place, R.R. #1, Fergus, Ontario, Canada N1M 2W3
Tel: (519) 846-3418 Fax: (519) 846-8101
E-mail: kathy.zurbrigg@omafra.gov.on.ca

CFIA's Notice to Equine Practitioners and Horse Owners:

Implementation of the Equine Infectious Anaemia-Enzyme Linked Immunosorbent Assay (EIA-ELISA) for EIA diagnostic testing performed by approved laboratories
Bob Wright, Animal Health and Welfare, OMAFRA

As of March 31, 2006, the CFIA has replaced the EIA-AGID (agar-gel immunodiffusion or Coggins') test with the EIA-ELISA for diagnostic testing. The turnaround time of the ELISA test in comparison with the Coggins' test was an important factor for the change. Test results are available within a few hours compared to the 24- to 48-hour time frame required for the AGID test. EIA-approved laboratories also favoured the ELISA test because of its efficient and accurate testing of large quantities of serum samples within a relatively short time. CFIA also needed to have more than one test available for the diagnosis of EIA in Canada, in the event that the production of AGID kits by the American supplier ceased.

Under the current testing protocol, when an EIA approved laboratory reports a negative EIA-ELISA test result, the horse is deemed negative and no further testing is required. However, when an approved laboratory obtains a positive or atypical EIA-ELISA result, the approved laboratory reports this finding as *ELISA inconclusive - to be confirmed by the Retrovirology Centre of Expertise (RCE)* and the serum sample is forwarded to the CFIA's RCE located in St-Hyacinthe, Quebec, where it is retested first by EIA-ELISA and, if positive, the results are confirmed by EIA-AGID tests. If the confirmatory testing is AGID positive or atypical, the horse's EIA status is reported accordingly and the CFIA applies control measures as per the current EIA policy. In situations in which test results are reported as ELISA negative or ELISA positive/AGID negative, the animal is considered EIA negative and no further testing or field action is required.

The ELISA detects antibodies earlier and at lower concentrations than the AGID test and, as a result, some false-positive results have been reported. According to the *World Organisation for Animal Health (OIE)*, a positive test result by ELISA requires confirmatory retesting using AGID. Horse owners and private veterinary practitioners should be aware of this requirement and allow the time required for EIA testing, so that in the event of a positive ELISA result, there is a sufficient margin allowed for confirmatory testing by AGID.

The validity of both the EIA-AGID (Coggins') and the EIA-ELISA tests for export certification to the United States and Mexico remains unchanged and is 180 and 30 days respectively.

For more information on the disease and/or the CFIA's EIA control program, please refer to http://www.inspection.gc.ca/english/anima/heasan/disemala/equianem/equianeme.shtml or contact the CFIA's local office. Any concerns or questions regarding this change of policy should be directed to Dr. Les Kumor at lkumor@inspection.gc.ca or Dr. Carole Simard at Simardc@inspection.gc.ca

Animal Health Strategy Consultation

David Alves, Office of the Chief Veterinarian for Ontario, OMAFRA

On August 23, 2006, Leona Dombrowsky, Minister of Agriculture, Food and Rural Affairs, issued a press release launching consultation on an enhanced animal health strategy for Ontario. The strategy will further protect the health and safety of people and animals in the province, as well as minimize impacts of potential animal health risks on the economy.

In 2005, the government established the Office of the Chief Veterinarian for Ontario to examine existing programs and develop a strategy for continued improvement. The consultation is the next step in the process and will explore ways to build on current animal health programs. These include diagnostic and technical support for private veterinarians, livestock inspection at abattoirs and auction markets and foreign animal disease response plans.

Through the consultation, the government will also seek suggestions, ideas and comments from stakeholders on a more comprehensive approach to animal health, including infrastructure, resources, and legislation. The roles and responsibilities of government partners in safeguarding provincial animal health will also be examined.

Meetings to discuss the strategy will be held starting in October 2006. Discussions at these meetings will focus on how the province should move forward on a broad range of issues that affect animal health, and the co-ordination of efforts between the animal and human health communities.

A discussion paper outlining proposed enhancements will be available this fall on the OMAFRA website at http://www.omafra.gov.on.ca, along with contact information for those wishing to provide feedback.

Questions about the consultation should be directed to Heather Kuntz (Animal Health Policy Analyst) at (519) 826-3200, or David Alves (Assistant Chief Veterinarian) at (519) 826-3127.

Livestock Emergency Response Training

Crystal Mackay, OFAC and Jocelyn Jansen, Animal Health and Welfare, OMAFRA

What happens when a truck full of cattle, pigs or poultry is in an accident? The Ontario Farm Animal Council (OFAC) will be hosting two livestock emergency courses for local emergency and rescue teams (police, firefighters, etc). The course will cover decision making for accidents, trailer design and extrication, animal behaviour, ways to calm, rescue, capture and temporarily confine animals, laws, euthanasia protocols and how to develop response teams. Local veterinarians may be called in to assist local emergency teams in the event of an accident.

For more information, please visit the OFAC website at http://www.ofac.org.

Funding for this project is being provided, in part, through OMAFRA and Agriculture and Agri-Food Canada's Advancing Canadian Agriculture and Agri-Food Program.

Ontario Component of 2006 National Wild Bird Influenza Survey, Including Wild Birds Found Dead

Bruce McNab, Office of the Chief Veterinarian for Ontario, OMAFRA

Ontario is participating in the 2006 National Wild Bird Influenza Survey that is being coordinated by the Canadian Cooperative Wildlife Health Center (CCWHC). The primary objective is to study the frequency and distribution of influenza viruses among wild birds in Canada and to watch for the Asian HPAI H5N1 influenza virus. To learn more about the national survey and its results, please refer to the CCWHC website at: http://wildlife1.usask.ca/. The following recommendations for the handling of dead wild birds have been updated since their publication in the June 2006 issue of CEPTOR.

Instructions for clients concerned about dead wild birds they have found:

- If **three or more** dead wild birds of any species are found together, phone the Guelph office of the Canadian Cooperative Wildlife Health Centre (CCWHC) at **1-866-673-4781** and follow their instructions.
- If fewer than three wild bird carcasses are found, you should, depending upon the species and size of bird:
    1. Phone your local health unit if the bird is a crow, raven or blue jay. They may or may not require the bird for the purposes of West Nile Virus surveillance.
    2. Phone the CCWHC at **1-866-673-4781** if it is not a crow, raven or blue jay, but is crow-size (approximately 15") or larger.
    3. Leave or dispose of the bird(s) if there are fewer than three dead wild birds smaller than a crow.
- If you have sick or dead hobby, ornamental, or farmed birds (such as pigeons, chickens, ducks or geese), you should call your veterinarian to get a diagnosis that includes laboratory testing.

Please read ALL the following instructions prior to handling a wild bird carcass:

- Use heavy-duty, leak-proof rubber gloves (as used in household cleaning) or leak-proof plastic bags when picking up or disposing of a dead bird, and avoid contact with skin or clothing. Contaminated clothing and shoes should be kept in a sealed plastic bag until they are washed. They can be washed using ordinary washing detergent at the temperature normally used for washing clothing. If contact with skin occurs, and after handling contaminated clothing, wash hands thoroughly with soap and warm water for at least 15-20 seconds. Alternatively, if hands are not visibly dirty, an alcohol-based hand sanitizer (60-90% alcohol) can be used.
- Do not rub your eyes, touch your face, eat, drink, or smoke while handling a dead bird. Grasp the bird carcass with your hand protected by at least two layers of leak-proof plastic bags and then turn the bags inside-out over the bird so it ends up inside the bags, with your hand on the outside. Ensure that you handle the carcass so that the beak or claws do not puncture the bags or gloves. The plastic bag containing the carcass should be closed tightly, and placed inside one additional clean plastic bag that is then tightly closed. Ensure that this bag is kept out of reach of children and pets.
- If the carcass will not be collected by authorities, it can then be disposed of in the household garbage. In municipalities where disposal in household garbage is prohibited, call the municipality for directions. Alternatively, the dead bird can be buried, but not in a plastic bag. Use a shovel or other implement to handle the carcass during the burial procedure.

- After the carcass is appropriately contained, wash hands thoroughly with soap and warm water for at least 15-20 seconds. Alternatively, if hands are not visibly dirty, an alcohol-based hand sanitizer (60-90% alcohol) can be used.
- Items that may have come in contact with the carcass should be thoroughly cleaned with normal household cleaner.

University of Guelph Swine Research Receives Top Ranking

Kathy Zurbrigg, Animal Health and Welfare, OMAFRA
As printed in the September issue of Ontario Hog Farmer

In early 2006, the OMAFRA and University of Guelph research partnership program was changed. Until this year, the dollars available for livestock research at the University of Guelph (U of G) were divided among the different livestock species. This meant that all swine researchers were competing for only the swine portion of the livestock research funding. Under the new program, researchers for all animal species and crops compete for the total research budget. The new research funding program, entitled *Sustainable Production Systems*, created an intense competition for research dollars. Researchers needed to ensure their proposals were topical, timely, applicable to the industry and of the highest scientific quality. The research office recognized these qualities in the U of G swine proposals by ranking them 1st, 2nd and 3rd to receive funding from the newly restructured program.

The Ontario swine industry has taken an active interest in research for many years. It is one of the few livestock commodities where producers contribute to research funding through their marketing board. Research funding from the Ontario Pork Marketing Board, the Ontario Ministry of Agriculture, Food and Rural Affairs and the University of Guelph has allowed for the development of a large body of swine research expertise at the University of Guelph. As a result, the swine research group captured the top three places out of the more than 30 project proposals submitted for funding from livestock and crop researchers.

Swine researchers at the university combined their expertise and experience to form three large research initiatives. "Healthy pigs and safe pork" is led by Dr. Robert Friendship and involves 16 university faculty. Studies under this initiative include investigating disease outbreaks for risk factors and solutions, investigating housing alternatives and pig behaviour and studying how bacteria, viruses and environmental factors interact to affect the health of pigs and people.

Dr. Kees deLange leads the "Sustainable pork production" initiative with 13 faculty members. This proposal incorporates a wide range of projects all with the united goal of improving pork production practices. Many factors from the pig's genetics to its environment will be investigated for their effects on meat and carcass quality, production efficiency and nutrient use. The third initiative is led by Dr. Allen King and will investigate factors to improve swine reproduction as well as new reproductive technologies.

All of this is good news for pig producers in Ontario. It demonstrates that setting aside money for research in the pork industry is a very worthwhile investment. University of Guelph swine researchers are leading investigations into all aspects of pig production and are eager to share the results and benefits of their research with producers. Producers may be approached to get involved in some of the research projects. For further information, refer to http://www.uoguelph.ca/research/omafra/animals/pork.shtml

Anything New in Water Testing?

Tim Blackwell, Animal Health and Welfare, OMAFRA

Water is often suspected as contributing to certain diseases in swine, particularly enteric or renal disease. There are little experimental data to support such conjecture, unless values are in extreme ranges for certain components such as sulphates, magnesium, nitrates, etc. Recently, Dr. Christian Klopfenstein at the CDPQ (Le Centre de développement du porc du Québec) has hypothesized that high chloride levels in water, particularly when the sodium/chloride ratio is inappropriate, may lead to health problems in swine. When anionic diets are fed to dairy cattle to decrease the incidence of milk fever, dairy producers occasionally report that cows restrict voluntary feed intake. Dr. Klopfenstein suggests that anionic water may decrease voluntary water consumption by pigs when chloride ion is in higher concentrations in the water than sodium ion. Although this so called "reversed" sodium/chloride ratio is rare in the water samples examined to date, high chloride levels have been found in the water on a limited number of farms and are suspected of contributing to various disorders affecting the pigs on the farm. If you are struggling with health problems on a pig farm that do not respond to normal interventions and the sodium/chloride ratio in the water is less than 1.0, you may wish to contact Dr. Klopfenstein at cklopfenstein@cdpqinc.qc.ca.

The Value of Second Guessing Yourself

Tim Blackwell, Animal Health and Welfare,OMAFRA

One year ago, a four-hundred-sow farrow-to-finish farm had an outbreak of porcine circo virus associated disease (PCVAD) affecting nursery and finisher pigs. Clinical signs ranged from acute respiratory and enteric disease to chronic weight loss, pallor and jaundice. Gross post-mortem findings included enlarged lymph nodes, interstitial pneumonia, colonic endema, and severe loss of body condition. Samples sent to the diagnostic laboratory for histopathology and immuno-histochemistry were consistent with PCVAD. Morbidity peaked at around 15% and mortality peaked at around 10% in nursery and finisher pigs. Management on the farm was already excellent but efforts were made to improve hygiene and internal biosecurity. The farm returned to pre-outbreak production values three months after the start of the outbreak.

Now, one year later, approximately 5 to 8% of pigs are fading away at weaning. A few have loose stools, some have increased respiratory efforts, most are thin and pale. The owner is convinced it is the return of PCVAD. Before recommending a vaccination program, you select four pigs for post-mortem examination. One of the four has wet, plum coloured lungs. There are no other gross lesions in this pig or any of the other three pigs. You decide to send tissues to the diagnostic laboratory for further testing. All four are negative on immuno-histochemistry and histology for PCVAD. The pneumonia appears to be bacterial. You recommend to the owner to segregate and treat similar pigs with antibiotics. One month later he reports a 50% cure rate following antibiotic treatment and a decreasing incidence of new cases.

It is tempting to assume that the majority of pigs that fail to thrive after weaning are suffering from PCVAD. The wide range of clinical signs and ubiquitous nature of the virus make the diagnosis almost obvious. This is particularly true if there has been a laboratory-confirmed case of PCVAD on the farm. The above case is an example of how assuming the obvious can lead us to inappropriate therapeutic or prophylactic medication choices. Despite the cost and effort involved, laboratory confirmation of clinical diagnoses is still critical to the effective treatment and control of swine infections.

Swine Vets Tired and Cranky? Remember to Wear your Ear Plugs!

Kathy Zurbrigg, Animal Health and Welfare, OMAFRA

Noise levels on thirty-six sow gestation barns were recently recorded. Thirty-three had an 8-hour average noise level of 75Db or greater. Three of the 33 were over 85Db. All barns were found to reach 90Db for at least a few minutes during feeding. Other studies in Europe and the US have documented tasks such as piglet processing, heat checking and power washing to reach noise levels in excess of 90Db.

Too much noise can cause Noise Induced Hearing Loss (NIHL). The National Institute for Occupational Safety and Health uses exposure to 85Db over an 8-hour day as the recommended cut off for noise level to prevent hearing loss. Hearing loss depends on both decibel level and the time exposed to that noise level. At decibels higher than 85, there is a decreased exposure time needed for hearing loss to occur. For example, at 90Db exposure time is 2½ hours and at 120Db (the noise level of a chain saw) exposure time is only 9 seconds.

Does this mean that decibel levels less than 85 are not of concern? Researchers have proven that noise also has non-auditory effects on people, starting at much lower decibel levels. At noise exposures of 75 Db and greater, studies have shown increased blood pressure and serum cortisol levels, cardiac arrhythmias, migraines, fatigue and irritability.

Noise may also affect the pigs. A recent German study reported increased cortisol levels in feeder pigs that were exposed to 90Db for 2 hours, 3 times a week. The pigs also showed increased lying times and a tendency towards decreased rate of gain. In the Ontario study, quieter barns were associated with those that had a farrowing rate of 85% or greater. Factors associated with quieter barns were group sow housing, automatic feed drops and corrugated aluminum paneling on the inner barn walls.

The solution for loud barns affecting human health is simple; swine producers and veterinarians need to wear their hearing protection. More challenging is the solution to decreasing the effects of noise on the pigs. Perhaps noise level should be considered in swine barn design, construction and renovations.

Establishment of the Ontario Hoof Trimmers Guild

Kathy Zurbrigg, Animal Health and Welfare, OMAFRA

In June 2006, the Ontario Hoof Trimmers Guild was established. The Guild is a non-profit organization that currently represents 25 full and part-time hoof trimmers. Their purpose is to share knowledge among the members and to advance professionalism in the hoof trimming trade. Priorities to be examined are to standardize diagnosis and record keeping of foot problems, animal welfare and personal safety of the hoof trimmer.

For a complete list of the guild members, please contact the Ontario Hoof Trimmers Guild at (519) 284-4086, or P. O. Box 2828, St. Marys, Ontario N4X 1A5.

Bacterial Cultures from Acidified Milk and Milk Replacer

Neil Anderson, Animal Health and Welfare, OMAFRA

Bacterial contamination of milk fed to kids or calves can negatively affect their health. Producers use various techniques to assure quality milk for their calves. In addition to sanitizing feeding equipment, producers refrigerate, pasteurize or acidify fresh colostrum and milk, or use milk replacer.

Our study at several farms this summer showed acidification does not inactivate or kill all bacteria in milk. In July and August 2006, we collected milk samples from 48 containers of acidified milk or milk replacer on 24 Ontario farms. We collected samples in sterile vials, packed them in ice inside insulated boxes and transported them to our office for storage in a freezer. All samples went to the laboratory for thawing and bacterial culture on the same day.

The Mastitis Research Laboratory at the University of Guelph performed all our culture work. We had no samples reported as contaminated.

We found Staphylococcus aureus in two samples of whole milk from two farms. Both had fewer than 500 colony forming units (cfu) per mL of milk. One sample had pH=4.4 and 7 hours contact time with acid. The other had pH=4.2 and 1 hour of contact time. Standard textbooks show Staph. aureus inactivation at pH 4.2 and we recommend 10-12 hours contact time before feeding acidified whole milk or waste milk. Our data showed other Staphylococcus species in 73% of milk replacer samples and 32% of whole milk/colostrum samples. Staphylococcus spp. cases were associated significantly with milk replacer (Odds Ratio = 5.82, 95% CI= 1.7-19.7). **Figure 1** illustrates that Staphylococcus spp. and Streptococcus spp. were the most common bacteria found in the samples.

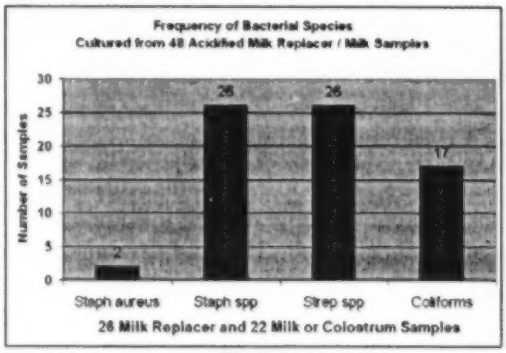


Figure 1

Figure 2 shows that thirty-one of 48 samples had no coliform growth. The majority of samples had no growth or less than 1000 cfu/mL of the bacterial spp identified. Results were reported as Culture Negative = 0, Score 1 = 100-500, 2 = 600-1000, 3 = 1100-5000 colonies and 4 = over 5000 cfu per mL of milk.

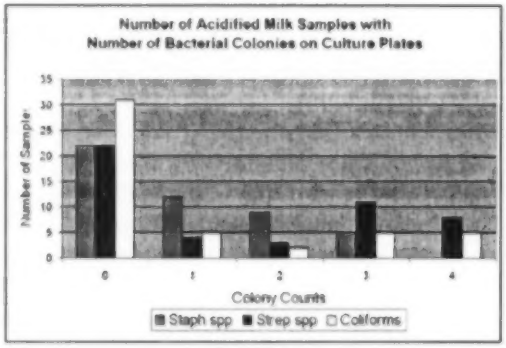


Figure 2

Producers were advised to follow an acidification protocol developed in Finland that called for pH 4.0-4.5. Our recommendation is a target of 4.2 for acidifying whole milk or colostrum. Overall, producers were successful at achieving the recommended pH range of 4.0-4.5. The majority used Formic Acid and a few used AgriAcid™. Two producers acidified their milk to less than pH 4.0 and four producers to pH greater than 4.5. Some reported challenges with reading litmus paper and testing their milk.

Figure 3 shows that 46 milk samples had pH in the 3.6 to 4.7 range with the majority of samples clustering in the 4.1 to 4.4 range. We tested all samples with a Cardy pH meter.

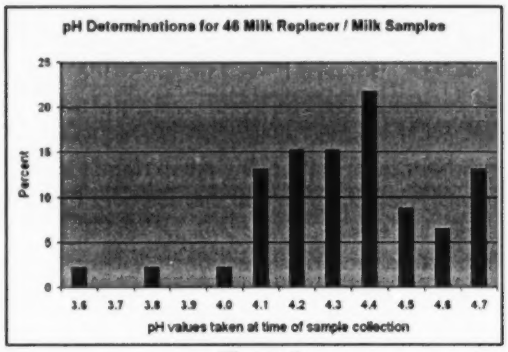
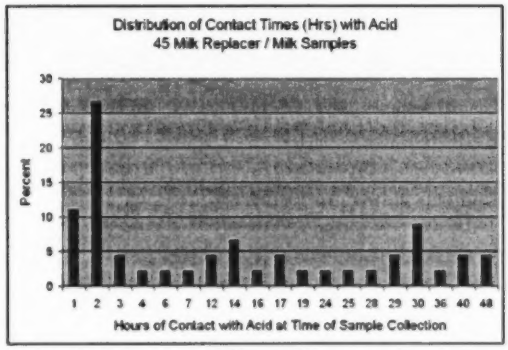


Figure 3

The frequency of milk preparation ranged from twice per day to every 3 days. However, every 1-2 days was most common. Fully 55% of coliform positive cultures were from milk samples with 1-7 hours contact time with acid, compared to 17% from samples with12 to 48 hours contact time. Contact time was a significant factor (OR=5.7, 95% CI=1.5-5.7).

Figure 4 summarizes the hours of contact time with acid at the time of milk sample collection. Contact ranged from 1 to 48 hours. The contact times reflect the frequency of mixing fresh acidified milk. Although pH is important for inactivating bacteria, adequate contact time also is essential.


Distribution of Contact Times (Hrs) with Acid
45 Milk Replacer / Milk Samples
Percent
30
25
20
15
10
5
0
1 2 3 4 6 7 12 14 16 17 19 24 25 28 29 30 36 40 48
Hours of Contact with Acid at Time of Sample Collection
Figure 4

Summary

Producers' experience with acidifing milk ranged from a few weeks to 14 months with most less than 9 months. Fully 81% of milk samples were in the target pH range. The acidified milk samples had levels of bacterial contamination considered low. Milk quality targets for calves should be 0 Staph. aureus, <50,000 cfu/mL Staph. spp, 0 Strep. agalactiae, <50,000 cfu/mL Strep. spp, <50,000 cfu/mL fecal Coliforms and <100,000 cfu/mL total count (McGuirk 2003).

McGuirk, S. 2003. Preconvention Seminar 7: Dairy Herd Problem Investigation Strategies. American Association of Bovine Practitioners 36th Annual Conference, September 15-17, 2003 - Columbus, OH.
http://www.vetmed.wisc.edu/dms/fapm/fapmtools/8calf/calfmorbid.pdf

Acknowledgments

Miss Jennifer Garner, OMAFRA 2006 summer experience student, collected the milk samples and survey data. Dr. Anna Bashiri, Mastitis Research Laboratory, Department of Population Medicine, Ontario Veterinary College, University of Guelph, provided laboratory services. Twenty-four Ontario dairy producers welcomed us to their farms and made the study possible.

Master Hoofcare Technician Program

Please Note

The web address for the "Master Hoofcare Technician Program," described in the June 2005 issue of CEPTOR has changed. A complete description of the course and how to register can now be found at http://lacs.vetmed.ufl.edu/MasterHoofCare/

Castration of Beef Calves

Neil Anderson, Animal Health and Welfare, OMAFRA

Castration of beef calves is a necessary but often unpleasant act of stockmanship. Given that intact bulls are more aggressive with fighting and mounting activity than steers, castration reduces injuries and the frequency of dark-cutting carcasses. Although bull meat is leaner, consumers do not favor the taste and packers discount the price paid to farmers. Castration at a young age minimizes hazards to the calf, the owner, and the purchaser. Hazards can include sickness or death in older calves and decreased liveweight gains of older calves in the few weeks following castration.

The following papers may give you something to talk about while you process calves for your clients this fall.

1. **Effect of method of castrating bulls on their growth rate and liveweight.**
   Knight TW, Cosgrove GP, Death AF, Anderson CB, Fisher AD. New Zealand Journal of Agricultural Research 2000;43: 187-192.

   Objective

   The aims of the two experiments presented in this paper were to compare the growth rates of postpubertal (Experiment 1) and pre-pubertal (Experiment 2) bulls castrated surgically with bulls castrated using a Bander, and with entire bulls (Experiments 1 and 2) and steers (Experiment 1).

   Abstract

   Bulls were castrated surgically or using a Callicrate™ Bander (Bander) to compare their effects on growth rate and liveweight. In Experiment 1, 20 bulls were castrated surgically (SCasts) at 14 months of age and 19 bulls were castrated with the Bander (BCasts). Within 7 days of castration the BCasts had large wounds above the band. Growth rates were lower ($P < 0.01$) over the first 29 days after castration for BCasts than for SCasts and both groups grew slower ($P < 0.05$) than steers castrated at weaning. There was no significant difference in liveweight between groups 108 days after castration. In Experiment 2, 10 bulls were castrated surgically at 8-9 months of age and 10 bulls were castrated with the Bander. BCasts grew slower ($P < 0.05$) over the first 35 days after castration than SCasts, resulting in lower liveweight for BCasts than SCasts ($P < 0.05$) 35-122 days after castration. No lesions occurred in the BCasts.

   Conclusions

   Using the Callicrate™ Bander to castrate bulls did not prevent the reduction in liveweight gain found with surgical castration. Bulls castrated by either method lost their liveweight advantage over steers within 1-3 weeks. The decreases in testosterone concentrations were as rapid with banding as with surgical castration. The lesions and large open wounds formed after castrating the 14-month-old bulls with the Bander have animal health and welfare implications. The banding technique should only be used on bulls less than 14 months of age.

2. **Effects of surgical or banding castration on stress responses and behaviour of bulls**
   Fisher AD, Knight TW, Cosgrove GP, Death AF, Anderson CB, Duganzich DM, Matthews LR. Aust Vet J 2001;79: 279-284.

   Objective

   To compare the behavioural effects of surgical and latex banding methods of castration in 14- and 9-month-old bulls. A second part to the study described in abstract 1.

Procedure

In Experiment 1, following administration of local anaesthetic, 14-month-old bulls were castrated by either surgical or banding methods, or left entire. Behavioural plasma cortisol, plasma haptoglobin and bodyweight responses were recorded. A group of steers from the same mob was used as an additional comparison for bodyweight data. In Experiment 2, following administration of local anaesthetic, 9-month-old bulls were castrated by either surgical or banding methods and cortisol, haptoglobin and bodyweight responses were recorded. Entire bulls from the same group were used as an additional comparison for bodyweight data.

Results

In Experiment 1, surgical castrates exhibited more leg stamping and tail swishing than banded or entire animals in the hours after castration. Surgical castrates in both experiments also showed an increase in plasma haptoglobin, which resolved after 4 days. Plasma cortisol was generally not affected by castration. Surgical castrates grew more slowly than entire bulls, but faster than banded animals, in the 56 days after treatment. In Experiment 1, after 56 days, the bodyweights of surgical and banded castrates were not different from the bodyweights of the steers. Fourteen-month-old banded cattle developed persistent wounds above the latex band, which remained for several weeks after scrotal dehiscence, but this did not occur in the 9-month-old animals.

Conclusion

The banding procedure produced fewer acute effects, but a greater suppression of growth than surgical castration and induced prolonged wound formation in the older age group, suggesting that this procedure may not be as suitable for yearling cattle.

3. **Effect of Castration on Health and Performance of Newly Received Stressed Feedlot Calves**

Berry BA, Choat WT, Gill DR, Krehbiel CR, Smith RA, Ball, RL. Oklahoma Agricultural Experiment Station Report 2001.

Story in Brief.

Three-hundred-sixty-eight lightweight newly received calves were used in two separate experiments to examine the effect of method of castration on receiving health and performance. These comparisons are relevant due to the large number of lightweight calves purchased in the southern Great Plains to be backgrounded for summer and winter grazing programs or to be sent directly to the feedlot. In the first experiment, three treatments were examined: 1) purchasing castrated males; 2) purchasing intact males and banding them shortly after arrival; or 3) purchasing intact males and surgically castrating them shortly after arrival. Few differences were observed in the first experiment; however, banding intact males shortly after arrival did decrease daily gain by 19% compared with purchasing steers, and by 14.9% compared with surgically castrating intact males shortly after arrival. No differences were observed for intake, feed efficiency, or morbidity. The second experiment examined the differences between purchasing castrated males (steers) or purchasing intact males and surgically castrating them shortly after arrival (cut bulls). In Experiment 2, steers gained 0.58 lb more and consumed 1.26 lb more feed (DM basis) per day compared with cut bulls. Steers also had less overall morbidity, having a fewer number treated for bovine respiratory disease compared with cut bulls.

Continuing Education/Coming Events

Oct. 1 - 7, 2006	Animal Health Week. 1-800-567-2862 ext 125
Oct. 3 - 7, 2006	World Dairy Expo, Alliant Energy Center, Madison, Wisconsin. www.worlddairyexpo.com
Oct. 5 - 7, 2006	Joint American and Canadian Embryo Transfer Association Scientific Convention. Westin Hotel, Ottawa. (613) 258-5944 ext. 313, www.ceta.ca/06convention.htm
Oct. 12 - 19, 2006	110th United States Animal Health Association Annual Meeting, Minneapolis Hilton Hotel, Minneapolis, Minnesota. www.usaha.org
Oct. 14 - 17, 2006	Canwest Veterinary Conference, Fairmont Chateau Whistler, Whistler, BC. (604) 929-7090, www.canwestconference.ca/
Oct. 15 - 19, 2006	24th World Buiatrics Congress, Nice France Convention Centre - Acropolis. www.wbc2006.com
Oct. 15 - 21, 2006	National Veterinary Technician Week. www.caahtt-acttsa.ca
Nov. 11 - 12, 2006	23rd Annual Farriers Conference. College of Veterinary Medicine,Cornell University, Ithaca, New York. (607) 253-3200 www.vet.cornell.edu/education/ConEd.htm
Nov. 16 - 17, 2006	Central Canada Veterinary Association Conference, Southway Inn, Ottawa. E-mail: Central_canada-vet_assoc@hotmail.com
Nov. 29, 2006	Big Bug Day III, Ontario Association of Swine Veterinarians, Kirkton Community Centre, Kirkton. www.ontariopork.on.ca/events/BigBugAgendaDiseaseDayNov2006.doc
Dec. 2 - 6, 2006	52nd Annual American Association of Equine Practitioners Convention, San Antonio, Texas. www.aaep.org
Dec. 5, 2006	Building the Foundation II, Dairy and Veal Healthy Calf Conference 2006, Ontario Veal Association, Woodstock Fairgrounds, Woodstock. www.ontarioveal.on.ca/index.html
Jan. 18 - 20, 2007	Western Canadian Association of Bovine Practitioners Annual Conference, Saskatoon Inn, Saskatoon, SK. Contact Phyllis Mierau, 1-866-269-8387, info@wcabp.com, www.wcabp.com
Jan. 25 - 27, 2007	Ontario Veterinary Medical Association Annual Conference, Westin Harbour Castle, Toronto. www.ovma.org/nonmembers/conference.shtml

Happy
Thanksgiving

What does prudent drug use really mean?
How can I incorporate biosecurity measures into my practice?

Ontario

Dear Colleague:

The prudent use of antimicrobials and biosecurity in livestock and companion animal medicine are two methods in a multi-barrier approach to deal with emergence and spread of antimicrobial resistance in the face of virtually no new antimicrobial drug development. Biosecurity is important as well to keep out foreign animal diseases, such as avian influenza and foot and mouth disease, and other infectious problems.

The Ontario Ministry of Agriculture, Food and Rural Affairs and the University of Guelph would like to offer an interactive continuing education course to veterinarians to update you on these two topics. Please fill in the following questionnaire so that we can meet your needs. Feel free to photocopy this page and have all veterinarians in your practice submit a questionnaire.

When is the best time of year for you to take a CE workshop?
Month(s): _____

What is your preferred length of the workshop?

☐ One day ☐ One and a half days ☐ Two days

What day(s) of the week is/are most convenient for a CE workshop? _____

What topics would you like to see covered (choose as many as you would like)?

☐ Infection control practices
☐ Facility biosecurity
☐ Emergency preparedness
☐ Current information on antimicrobial use and antimicrobial resistance in veterinary medicine
☐ Qualitative and quantitative sensitivity testing – which provides more information?
☐ What's new in antimicrobial pharmacokinetics and pharmacodynamics
☐ The practice of prudent use – disease prevention
☐ The practice of prudent use – disease treatment and control
☐ Clinical pharmacology – the assessment (benefits, risks and costs) of antimicrobial therapy at the herd, flock, pen or individual animal level
☐ Extra-label antimicrobial use and compounding – weight of evidence
☐ Alternatives to antimicrobial therapy
☐ Trade/Marketing and antimicrobial use in agriculture
☐ Antimicrobial use and environmental contamination
☐ Other suggestions:

_____

_____

Thank you. Fax completed questionnaire to Dr. Kim Klotins, Antimicrobial Resistance Specialist, OMAFRA at (519) 826-3254. If you have questions, contact Kim at (519) 826-3215 or kim.klotins@omafra.gov.on.ca.

CEPTOR feedback form

Please add our clinic to your mailing list. ❑ Please change our clinic address. ❑

We have _____ practitioners in our clinic and would like to receive ____ copies of CEPTOR.
(Indicate #)

Clinic name: .....

Practitioners: .....

Mailing address: .....

Town/City: ..... Postal Code: .....

Telephone: ..... Fax: .....

E-mail: .....

Please return this form with your comments to:

Kathy Zurbrigg, Animal Health and Welfare, Ontario Ministry of Agriculture, Food and Rural Affairs
Wellington Place, R.R. # 1, Fergus, Ontario N1M 2W3
Tel.: (519) 846-3418 Fax: (519) 846-8101 E-mail: kathy.zurbrigg@omafra.gov.on.ca

Comments: .....

.....

.....

.....

Deadline for next issue: November 24, 2006

Ontario
Ministry of Agriculture, Food and Rural Affairs

Animal Health and Welfare
2nd Floor, Wellington Place
R.R. #1, Fergus, Ontario
N1M 2W3